Cold Weather Safety and Injury Prevention

Prepared by
U.S. Army Corps of Engineers, Alaska District
Safety and Occupational Health Office
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Responsibilities

- Cold injury prevention is a Command responsibility.
- Supervisors are responsible for the health and safety of their employees.
- Employees are responsible for preventing individual cold injuries.

Cold Weather Hazards

Cold (temperatures below 40º F)

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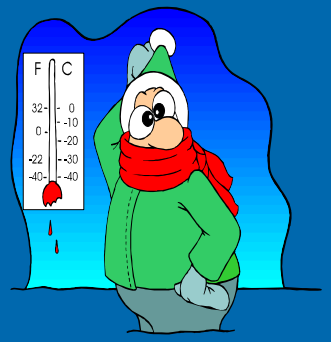
Wet (rain, snow, humidity)



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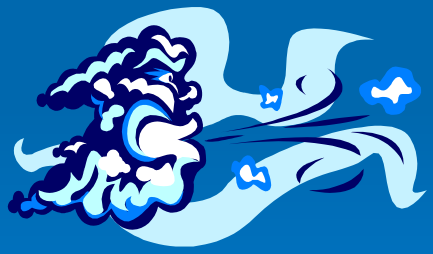
Wind (>5mph)



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Increased Risk

For

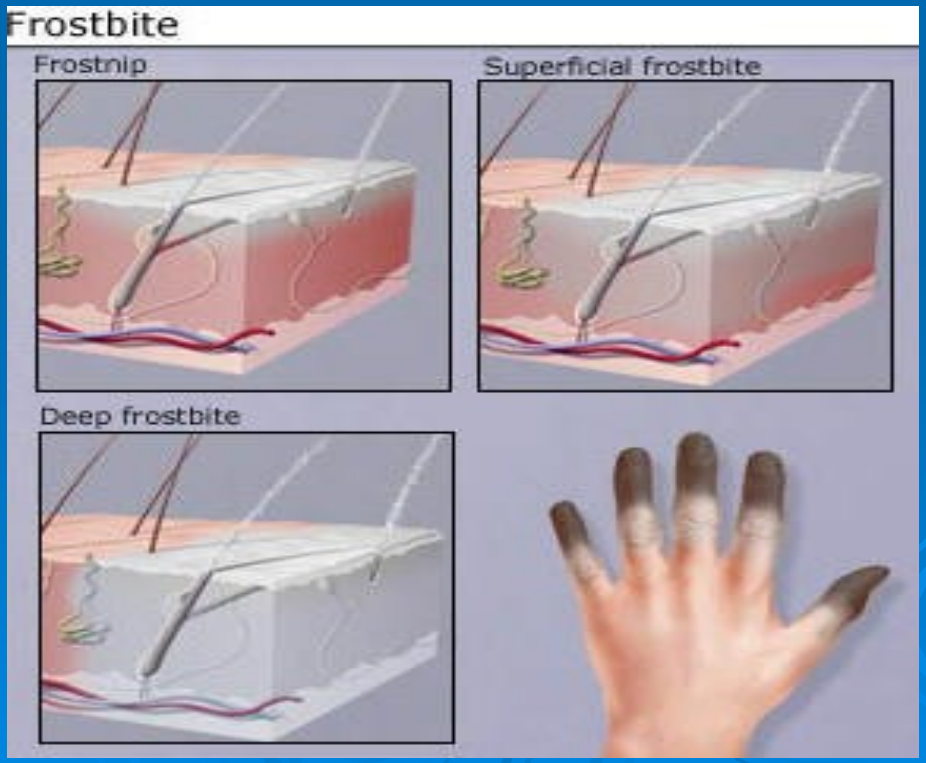
Cold Weather Injuries (CWI)

Cold Weather Injuries

- Chilblain - bare skin exposed to cold, humid air
- Frostbite - freezing of tissue and body parts
- Hypothermia - whole body temperature dangerously low
- Dehydration - loss of body fluids
- Carbon Monoxide poisoning - over exposure to poisonous gases generated by fuel exhaust (gas heaters and poor ventilation)
- Immersion Foot (Trench Foot) – prolonged exposure of feet to damp and wet conditions Injuries
- Snow Blindness - Eye injuries due to prolonged exposure to ultraviolet rays reflecting off snow.
- Bites, lacerations, fractures, concussions resulting from animal attacks (bear, moose, fox looking for food to eat in domestic areas).

Cold Weather Injuries

- Whole body injuries and suffocation from avalanches.
- Fractures, bruises, concussions resulting from slips, trips, and falls on wet and icy surfaces.
- Injuries resulting from unsafe vehicle operations.



Risk Factors for CWI

- Low activity
- Fatigue/sleep deprivation
- Little experience/training in cold weather
- Lack of adequate shelter/clothes
- Lack of provisions/water
- Previous cold injuries or other significant injuries and/or illnesses
  - Cardiovascular disease
  - Diabetes
  - Hypertension
- Use of tobacco/nicotine or alcohol
- Skipping meals/poor nutrition
- Medications

CWI Prevention

Ensure appropriate clothes and proper wearing of clothes

Remember the acronym C-O-L-D for dressing in the cold and avoiding hypothermia

Keep it ----- Clean

Avoid ------ Overheating

Wear it ----- Loose and in Layers

Keep it ----- Dry

- **Clothes do not have holes/broken zippers etc.**
- **Hands, fingers and head are covered and protected**
- **Avoid spilling liquids on skin or clothes, liquid stains will reduce clothing's protective efforts**

Eat all meals to maintain energy

Drink water and/or warm nonalcoholic fluids to prevent dehydration

Keep Body Warm

- Keep moving
- Exercise big muscles (arms, shoulders, trunk, and legs) to keep warm
- Avoid alcohol use (alcohol impairs the body's ability to shiver)
- Avoid standing on cold, wet ground
- Avoid tobacco products which decrease blood flow to skin

Protect Feet

- Keep socks clean and dry
- Wash feet daily if possible
- Carry extra pairs of socks
- Change wet or damps socks ASAP; use foot powder on feet and boots
- Avoid tight socks and boots; do not over tighten boot or shoes
- Wear overshoes to keep boots dry

Protect Hands

- Wear gloves or mittens or mittens with inserts
- Warm hands under clothes if they become nu
- Avoid skin contact with snow, fuel or bare metal. Wear proper gloves when handling fuel or bare metal.
- Waterproof gloves by treating with waterproofing compounds

Protect Face and Ears

- Cover face and ears with scarf. Wear insulated cap with flaps over ears or balaclava
- Warm face and ears by covering them with your hands. Do NOT rub face or ears.
- Wear sunscreen
- Exercise facial muscles

Protect Your Eyes

- Wear UV rated sunglasses to prevent snow blindness
- If sunglasses are not available, protective slit goggles can be made from cutting slits in cardboard.

Protect Each Other

- Watch for signs of frostbite and other cold weather injuries in your buddy
- Ask about and assist with re-warming of feet, hand, ears or face

Prevent Carbon Monoxide Poisoning

- Use only approved heaters in working or sleeping areas
- Do not sleep near exhaust of a vehicle while vehicle is running
- Do not sleep in enclosed area where an open fire is burning

Protection From Wild Life

- Moose, bear, fox and other wildlife are always looking for domestic food sources. Keep your food waste sealed and secured from the outdoors until disposal.

- Do not feed wild life. Alaska Statute prohibits the feeding of game.

AAC 92.230. FEEDING OF GAME.

A person may not intentionally feed a moose, deer, elk, bear, wolf, coyote, fox, or wolverine (except under terms of a permit issued by the department), or negligently leave human food, animal food or garbage in a manner that attracts these animals. However, this prohibition does not apply to use of bait for trapping fur bearers or hunting black bears under 5 AAC 84 - 5 AAC 92

- Do not [illegible]veen moo[illegible]lf or near a bear and its cub.

Protection From Avalanches

Avalanche conditions are created by fresh snowfall or high winds

Do not travel in restricted or off limit areas.

Contact your local AK Department of Natural Resources for current avalanche conditions.

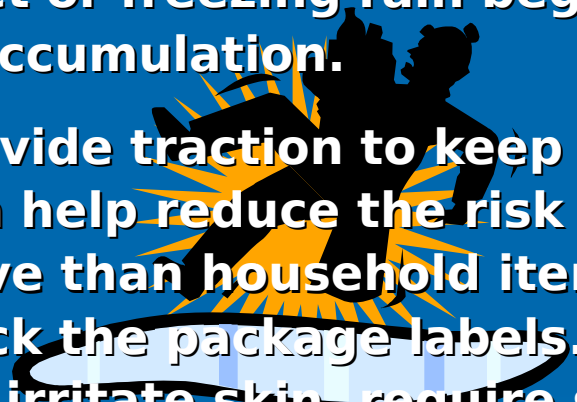
Carry locators/probes on your snow mobiles when traveling on trails.

Slips, Trips and Falls

Walks and Drives

- Remove snow immediately following a snowfall, before it becomes packed or turns to ice.

- Prevent ice from forming by spreading ice melters when heavy wet snow, sleet or freezing rain begins. Reapply later, after removing any accumulation.



- Remove ice and provide traction to keep walkways safe. Many ice melters can help reduce the risk of slips and falls, and are more effective than household items like sand or kitty litter. Be sure to check the package labels. Always look for products that do not irritate skin, require special handling or protective clothing, or contain harsh chemicals. Follow directions carefully.

- Clear a wide path. When snow accumulates, take extra time to clear more than just a single shovel width on sidewalks. It will make walking easier and safer.

Walk Defensively

- Slippery sidewalks, parking lots, streets and entryways pose extra dangers
- Use crosswalks

Choose Proper Footwear

- Wear footwear with maximum traction
- Winter boots
- Non-slip soles or overshoes

Avoid Overloading

- Keep your balance
- Keep your packages together
- Don't block your vision

Parking Lot Safety

- Watch your footing when getting out of your ve

- It takes a vehicle much longer to stop on ice an

Shoveling

- Take it slow and do it carefully

- Lift small amounts, especially when removing heavy snow, slush or ice

- Use proper posture to prevent back strain. Keep your back straight, and lift gently from the knees and hips. Stop if you feel pain or become short of breath

Winter Driving

Vehicle Preparation

- Battery: Cold weather starts require a battery that is fully charged. Recharge or replace weak batteries. Have your charging system checked, too.

- Ignition system: Damaged ignition wires or a cracked distributor cap may cause a sudden breakdown.

- Lights: Regularly check that *all* lights are functioning properly and that headlights are properly aligned.

- Brakes: Brakes should be checked and, if needed, serviced to ensure even braking.

- Tires: The traction between the tires and the road surface determines how well your vehicle starts, turns and stops. Make certain your snow tires or all-season radials are properly inflated and in good condition. Ensure all four tires have the same tread pattern for even traction.

- Exhaust system: Have the exhaust system fully checked for leaks that could send carbon monoxide into your vehicle.

- Heating and cooling system: Check your radiator and hoses for cracks and leaks. Make sure the radiator cap, water pump and thermostat work properly. Test the strength of the anti-freeze, and test the functioning of the heater and defroster.

-Windshield: Make sure wipers are in good condition and fill up on winter washer fluid.

Driving In Bad Weather

- Make sure you have enough fuel.

- Clear your vehicle of ice and snow. Make sure your windows are clear of
ice and fog.

- Turn on your lights when driving. If visibility becomes poor while driving
pull off until it clears up.

- Stick to main roads, if you have car trouble you can seek help.

- Wear your seat belt at ALL TIMES.

- Let someone know where you plan to travel and the route you are taking. If you don't show up at a reasonable time, a search may be initiated .

- Listen on your radio for current and future weather conditions

Trapped In Vehicle During Severe Weather

- If you have a cellular phone, call for help.

- Stay in your vehicle. Disorientation occurs quickly in wind-driven snow and cold.

-Run the engine about ten minutes each hour for heat.

-Watch out for carbon monoxide poisoning. Keep exhaust pipe clear of snow and open a window slightly for ventilation.

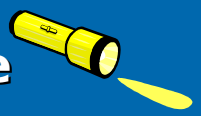
- Make yourself visible to rescuers. Turn on the dome light at night when running engine. Tie a brightly colored cloth to your antenna or door. Raise the hood indicating trouble after snow stops falling.

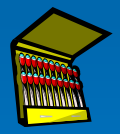
- Do mild exercises to sustain circulation. Avoid staying in one place too long.

- If more than one person is in the car, take turns sleeping

Winter Automobile Survival Kit

- Shovel
- Sand, salt or kitty litter
- Traction mats
- Tow chain or rope
- Compass
- Cloth or roll of paper towels
- Warning light or road flares
- Extra clothing and footwear
- Emergency food pack
- Axe or hatchet
- Knife
- Booster cables
- Water containers
- Ice scraper and brush
- Water-proof matches or lighter





- Road maps
- Matches and a 'survival' candle in a deep can (to warm hands, heat a drink or use as an emergency light)
- Fire extinguisher
- Methyl hydrate (for fuel line and windshield de-icing)
- The following items should be kept in the cab of your car:
- Flashlight with extra batteries
- First-aid kit
- Blanket (special 'survival' blankets are best)/sleeping

Black Ice

- **Be alert during early morning and late evening when road icing is most likely to occur.**

- **Icy sections are most likely to be found on and under bridges, high sections of roads, tops of hills exposed to wind, in valleys and forest, and roads near rivers, lakes and along foggy areas.**

- **When driving on a wet road, there is always a strong possibility that black ice may lie ahead.**

- **Once on an icy section, do not accelerate, brake, downshift or make a sudden change in steering direction. Keep a safe distance from other vehicles.**

- **If you get into trouble, try to steer to the edge of the road. Sand and salt from previous road “dustings” may have blown to the road edges by past traffic and will you help you regain control.**

- **Slow down and drive with care. Driving too fast allows you less time to react and reduces your chances of recovering from**

Vehicle Skids

Rear Wheel Skids

- Take your foot off the brake or accelerator.

- De-clutch on a car with a manual transmission, or shift to neutral on a car with automatic transmission.

- Look and steer in the direction you want the front of the car to go.

- As the rear wheels stop skidding to the right or left, counter-steer until you are going in the desired direction.

- In a rear-wheel drive vehicle, if you over-correct the first skid (Step 4), be prepared for a rear-wheel skid in the opposite direction. Practice and the use of timely, gentle movement of the steering wheel are necessary to avoid this type of skid.

Front Wheel Skids

- Take your foot off the brake or accelerator

- De-clutch on a car with manual transmission, or shift to neutral on a car with automatic transmission.

- If the front wheels have been turned prior to the loss of traction don't move the steering wheel. Since the wheels are skidding sideways, a certain amount of braking force will be exerted. Unwinding the steering wheel will result in regaining steering sooner; however, the vehicle will be traveling faster because there is little sideways braking force. This technique should only be attempted in situations where limited space and sharp curves exist -- however, in this case do not reduce pressure on the brakes, because the vehicle will shoot off in the direction the wheels are facing.

- Wait for the front wheels to grip the road again. As soon as traction

Front Wheel Skids (continued)

- Release the clutch or shift to drive and apply gentle accelerator

pressure so that the engine speed matches the road speed, and

accelerate smoothly to a safe speed.

Four Wheel Skids

- Ease foot off the accelerator or take your foot off the brake.

- De-clutch on a car with manual transmission or shift to neutral on a car

with an automatic transmission, if you can do so quickly.

- Look and steer in the direction you want the front of the car to go.

- Wait for the wheels to grip the road again. As soon as traction returns,

the vehicle will travel in the desired direction.

- Release the clutch or shift to drive and maintain a safe speed.

Braking

Braking if you don't have anti-lock brakes:

- If you don't have anti-lock brakes, the most efficient technique for braking under these conditions is to use threshold braking together with de-clutching (manual shift) or shifting to neutral (automatic transmission). The best way to threshold brake (to make a controlled stop) is the heel-and-toe method. Keep the heel of your foot on the floor and use your toes to apply firm, steady pressure on the brake pedal just short of lockup to the point at which the wheels stop turning.

- Under the stress of trying to stop quickly, drivers almost inevitably overreact and lock the wheels. If this happens, use toe-and-heel action to release brake pressure one or two degrees, then immediately reapply it with slightly less pressure.

Braking with anti-lock brakes:

- According to a survey conducted by the CAA/AAA Foundation for Traffic Safety, 50% of people are unaware of how anti-lock brakes and traditional brakes differ. If you have an anti-lock brake system (ABS), use the heel-and-toe method, but do not remove your foot from the brake. When you put on the brakes hard enough to make the wheels lock momentarily, you will typically feel the brake pedal pulse back against your foot. Don't let up!

(Novice ABS users can try hard braking in a vacant snow-covered parking lot.)

- How ABS works: A sensor located at each wheel detects when the wheel stops turning and starts to skid. As soon as the skid is detected, the anti-lock system relieves the pressure just enough to allow the wheel to turn again. This allows you to steer while you continue to bring the vehicle to a stop.

Wind Chill

- The wind chill index gives the equivalent temperature of the cooling power of wind on exposed flesh.

- Any movement of air has the same effect as wind (running, riding in open vehicles, or helicopter downwash).

- Any dry clothing (mittens, scarves, masks) or material which reduces wind exposure will help protect the covered skin.

- Trench foot injuries can occur at any point on the wind chill chart and are much more likely to occur than frostbite at “LITTLE DANGER” wind chill temperatures, especially on extended exercises/missions and/or in wet environments. Can lead to permanent disability, just like frostbite.

Wind (mph)	Temperature (°F)																	
Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98

Note: Frostbite times are for exposed cheek skin.

Frostbite Times ▶	30 minutes	10 minutes	5 minutes

Figure 3-4. Windchill temperature index

Wind Speed (mph)	Air Temperature (°F)											
	10	5	0	–5	–10	–15	–20	–25	–30	–35	–40	–45
5	>120	>120	>120	>120	31	22	17	14	12	11	9	8
10	>120	>120	>120	28	19	15	12	10	9	7	7	6
15	>120	>120	33	20	15	12	9	8	7	6	5	4
20	>120	>120	23	16	12	9	8	8	6	5	4	4
25	>120	42	19	13	10	8	7	6	5	4	4	3
30	>120	28	16	12	9	7	6	5	4	4	3	3
35	>120	23	14	10	8	6	5	4	4	3	3	2
40	>120	20	13	9	7	6	5	4	3	3	2	2
45	>120	18	12	8	7	5	4	4	3	3	2	2
50	>120	16	11	8	6	5	4	3	3	2	2	2

Note: Wet skin could significantly decrease the time for frostbite to occur.

FROSTBITE RISK

LOW – freezing is possible, but unlikely (WHITE)

HIGH – freezing could occur in 10–30 minutes (LIGHT GREY)

SEVERE – freezing could occur in 5–10 minutes (DARK GREY)

EXTREME – freezing could occur in <5 minutes (MEDIUM GREY)

Figure 3-5. Time in minutes until the occurrence of cheek frostbite in the most susceptible 5 percent of personnel

THRESHOLD LIMIT VALUES WORK/WARM-UP SCHEDULE FOR FOUR-HOUR SHIFT*

Air Temperature Sunny Sky		No Noticeable Wind		5 mph Wind		10 mph Wind		15 mph Wind		20 mph Wind	
° C (approx)	° F (approx)	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks	Max. Work Period	No. of Breaks
-26° to -28°	-15° to -19°	(Norm breaks) 1		(Norm breaks) 1		75 min.	2	55 min.	3	40 min.	4
-29° to -31°	-20° to -24°	(Norm breaks) 1		75 min.	2	55 min.	3	40 min.	4	30 min.	5
-32° to -34°	-25° to -29°	75 min.	2	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease	
-35° to -37°	-30° to -34°	55 min.	3	40 min.	4	30 min.	5	Non-emergency work should cease			
-38° to -39°	-35° to -39°	40 min.	4	30 min.	5	Non-emergency work should cease					
-40° to -42°	-40° to -44°	30 min.	5	Non-emergency work should cease							
-43° to below	-45° & below	Non-emergency work should cease									

*** Source: Canadian Centre for Occupational Health and Safety Adapted from Threshold Limit Values (TLV) and Biological Exposure Indices (BEI) booklet published by ACGIH, Cincinnati, Ohio, 2000.**

Time in seconds to reach a finger temperature of 32° F while touching various materials at different temperatures

32 °F	43 seconds	>100 seconds	>100 seconds
23 °F	15 seconds	50 seconds	>100 seconds
14 °F	5 seconds	15 seconds	62 seconds
5 °F	2 seconds	5 seconds	20 seconds
–4 °F	1 second	2 seconds	7 seconds
–13 °F	<1 second	<1 second	4 seconds

CWI
Symptoms and Treatment

Chilblain

Cause

- Repeated exposure of bare skin for prolonged periods from 20°-60°F with high humidity (for those not acclimated to cold weather).

Symptoms

- Swollen, red skin (or darkening of the skin in dark-skinned persons).
- Tender, hot skin, usually accompanied by itching.

First-Aid

- Warm affected area with direct body heat.
- Do not massage or rub affected areas.
- Do not wet the area or rub it with snow or ice.
- Do not expose affected area to open fire, stove, or any other intense heat source.

Prevention

- Use contact gloves to handle all equipment; never use bare hands to handle equipment, esp. metal.
- Use approved gloves to handle all fuel and POL products.
- In the extreme cold environment, do not remove clothing immediately after heavy exertion (PT); until you are in a warmer location.
- Never wear cotton clothing in

Immersion Foot (Trench Foot)

Cause

- Prolonged exposure of feet to wet conditions 32°- 60°F. Inactivity and damp socks and boots (or tightly laced boots that impair circulation) speed onset and severity.

Symptoms

- Cold, numb feet may progress to hot with shooting pains.
- Swelling, redness, and bleeding.

First-Aid

- If you suspect trench foot, get medical help immediately!
- Re-warm feet by exposing them to warm air.
- Do not allow victim to walk on injury
- Evacuate victim to a medical facility.
- Do not massage, rub, moisten, or expose affected area to extreme heat.

Prevention

- Keep feet clean and dry; change wet or damp socks as soon as possible.
- Wet of damp socks should be dried as soon as possible to allow them to be re-used.
- The inside of Vapor Barrier boots should be wiped dry once per day, or more often as feet sweat.
- Dry leather boots by stuffing with paper towels.

Frostbite

Cause

- Freezing of tissue. e.g. fingers, toes, ears, and other facial parts.
- Exposure to bare skin on metal, extremely cool fuel and POL* wind chill, and tight clothing - particularly boots -

Symptoms

- Numbness in affected area.
- Tingling, blistered, swollen, or tender areas.
- Pale, yellowish, waxy-looking skin (grayish in dark-skinned soldiers).
- Frozen tissue that feels

First-Aid

- Frostbite can lead to amputation! Evacuate immediately!
- Start first-aid immediately. Warm affected area with direct body heat.
- Do not thaw frozen areas if treatment will be delayed.
- Do not massage or rub affected areas.
- Do not wet the area or rub it with snow or ice.
- Do not expose affected area to open fire, stove, or any other intense heat source.

Prevention

- Use contact gloves to handle all equipment; never use bare hands to handle equipment.
- Use approved gloves to handle fuel and POL.
- Never wear cotton clothing in the cold weather environment.
- Keep face and ears covered and dry
- Keep socks clean and dry
- Avoid tight socks and boots.

Hypothermia

Cause

- Prolonged cold exposure and body-heat loss. May occur at temperatures well above freezing, especially when a person is wet.

Symptoms

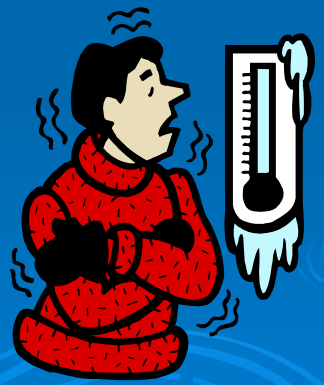
- Shivering may or may not be present.
- Drowsiness, mental slowness or lack of coordination. Can progress to unconsciousness, irregular heartbeat, and death.

First-Aid

- This is the most serious cold exposure medical emergency and can lead to death! Get the soldier to a medical facility as soon as possible!
- Even if a victim is cold and is not breathing, never assume someone is dead until determined by medical authorities!
- Strip off wet clothing and wrap victim in blankets or a sleeping bag.
- Place another person in sleeping bag as an additional heat source.
- For the person with unconsciousness and very low heartbeat,

Prevention

- Never wear cotton clothing in the cold weather environment.
- Anticipate the need for warming areas for persons exposed to cold, wet conditions.



Symptoms and Treatment

Dehydration

Cause

- Depletion of body fluids.

Symptoms

- Dizziness.
- Weakness.
- Blurred vision.

First-Aid

- Replace lost water. Water should be sipped, not gulped.
- Get medical treatment.

Prevention

- At a minimum drink 3-6 quarts of fluid per day.

Snow Blindness

Cause

- Burning of the cornea of the eye by exposure to intense UV rays of the sun in a snow-covered environment

Symptoms

- Pain, red, watery or gritty feeling in the eyes

First-Aid

- Rest and total darkness; bandage eyes with gauze
- Evacuate if no improvement within 24 hours

Prevention

- Use sunglasses with side protection in a snow-covered environment.
- If sunglasses are not available use improvised slit glasses.

Carbon Monoxide Poisoning

Cause

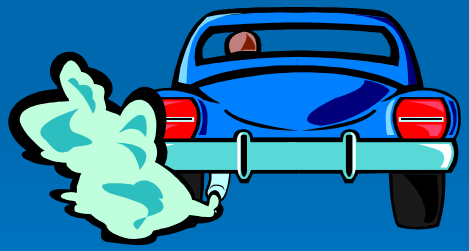
- Replacement of oxygen with carbon monoxide in the blood stream caused by burning fuels without proper ventilation

Symptoms

- Headache, confusion, dizziness, excessive yawning
- Cherry red lips and mouth, grayish tint to lips and mouth (in dark skinned individuals)
- Unconsciousness

First-Aid

- Move to fresh air
- CPR if needed
- Administer oxygen if available. Evacuate



Prevention

- Use only approved heaters in sleeping areas and ensure that personnel are properly trained to operate the heaters
- Never sleep in running vehicles
- Always post a fire guard when operating a heater in sleeping areas.

Sources of Carbon Monoxide

Unvented kerosene and gas space heaters; leaking chimneys and furnaces; back-drafting from furnaces, gas water heaters, wood stoves, and fireplaces; gas stoves; generators and other gasoline powered equipment; automobile exhaust from attached garages; and tobacco smoke.

Leadership Emphasis

- Ensure all employees are educated about prevention, recognition and treatment of cold weather injuries

- Delegate responsibilities to ensure preventive/control measures have been implemented

- Monitor adequacy/progress of implementation of preventive/control measures

- Do frequent spot checks of clothes, personal protection and hydration

- Record, monitor and report indicators of increasing cold risks, for example:

  - Increasing number of cold weather injuries
  - Increased complaints/comments about cold
  - Observations of shivering, signs of cold weather injuries

- Evaluate current control measures and strategize new or more efficient ways to keep warm and avoid cold injuries

- Discontinue/limit activities/exercise during very cold weather

- Use covered vehicles for transport

- Have warm facilities available

- Have warm food and drink on hand

- Initiate the buddy system. Have personnel check each other for cold injuries.

References and Resources

U.S. Army Centers for Health Promotion and Preventive Medicine:
U.S. Army Center for Health Promotion and Preventive Medicine

U.S. Army Corps of Engineers Safety and Health Requirements Manu
EM 385-1-1, 3 November 2003:
http://www.hq.usace.army.mil/soh/em385/current/current38511.htm

TB MED 508 Prevention and Management of Cold Weather Injuries, April 2005
http://chppm-www.apgea.army.mil/documents/TBMEDS/tbmed508.p

EPA Carbon Monoxide Information: http://www.epa.gov/iaq/co.html

Aggressive Moose:
http://www.wildlife.alaska.gov/index.cfm?adfg=aawildlife.agmoose

Bear Information: http://www.wildlife.alaska.gov/index.cfm?adfg=b

Avalanche Information and contact numbers:
http://www.dnr.state.ak.us/parks/safety/avalanch.htm
http://www.dnr.state.ak.us/parks/asp/moreinfo.htm